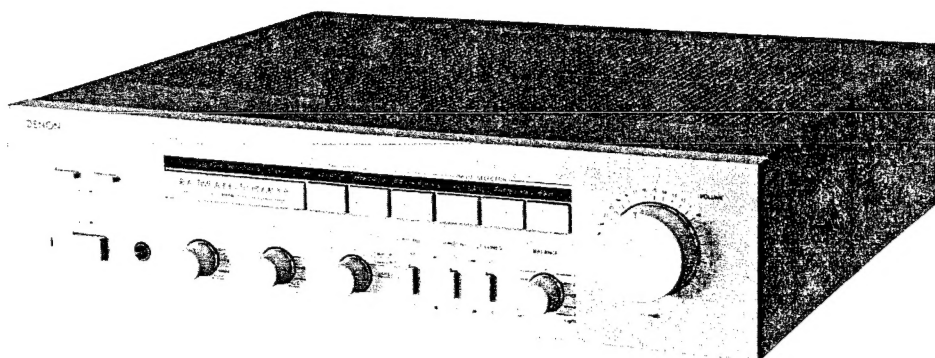


DENON

FOR
EUROPEAN, U.K., U.S.A., ASIA MODELS

Hi-Fi Pre-Main Amplifier

SERVICE MANUAL MODEL PMA-737 SOLID-STATE PRE MAIN AMPLIFIER



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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

POWER AMPLIFIER SECTION

Rated Output Power:

Both channel drive (TUNER → SP OUT)
 55 W + 55 W (8 ohm Load) 20 Hz to 20 kHz
 65 W + 65 W (4 ohm Load) 20 Hz to 20 kHz
 1 kHz (4 ohm Load) 60 W + 60 W (IEC
 Subject to change by temperature test)

Except USA & Canada models

Both channel drive (TUNER → SP OUT)
 60 Watts minimum rms per channel into 8-ohm with less than
 0.05% total harmonic distortion from 20 Hz to 20 kHz.
 65 W + 65 W (4-ohm Load) 20 Hz to 20 kHz at THD 0.05%
 1 kHz (4-ohm Load) 85 W + 85 W (at THD 1.0%) (DIN)
 0.05% at rated power (20 Hz ~ 20 kHz, 8-ohm Load)
 0.007% at -3 dB power (20 Hz ~ 20 kHz, 8-ohm Load)

USA & Canada models

Total Harmonic Distortion:

Intermodulation Distortion:

Output Band Width:

Transmission Characteristic:

Input Sensitivity:

Input Impedance:

Output Impedance:

Output Terminals:

4 Hz ~ 150 kHz $+0$ dB (at 1 W output)
 -3

150 mV

30 kohm

0.1 ohm (1 kHz)

Speaker: A or B Load 4 ~ 16 ohm

A + B Load 8 ~ 16 ohm

Headphone/Stereo Headphone

EQUALIZER AMPLIFIER SECTION

Equalizer Amplifier Output
(REC OUT Terminal):

Maximum Output: 10 V (at 47 kohm load)

Rated Output: 150 mV

Total Harmonic Wave Distortion: Below 0.002%
 (at 1 kHz, 8 V output)

Input Sensitivity/Input Impedance:

PHONO MM 2.5 mV 47 kohm

MC 200 μ V 100 ohm

TUNER 150 mV 30 kohm

DAD., VIDEO/AUX, TAPE 150 mV 30 kohm

PHONO (MC) Within ± 0.3 dB (20 Hz ~ 100 kHz)

RIAA Deviation:

OVERALL CHARACTERISTICS

SN Ratio (IHF A Network):

PHONO MM 86 dB

(input terminals short-circuited for 2.5 mV input)

MC 70 dB

(input terminals short-circuited for 250 μ V input)

TUNER, TAPE, DAD, VIDEO/AUX 106 dB

(input terminals short-circuited)

Tone Control Adjustable Range:

BASS 100 Hz ± 8 dB

TREBLE 10 kHz ± 8 dB

Loudness Characteristics:

Low frequency 100 Hz + 7 dB

High frequency 10 kHz + 6 dB

AC OUTLETS:

(For U.S.A. Canada and Asia)

POWER SOURCE:

U.S.A. and Canada AC 120 V, 60 Hz,

Germany and France AC 220 V, 50 Hz,

U.K. and Australia AC 240 V, 50 Hz

Asia AC 110/120/220/240 V, 50/60 Hz (Multiple)

POWER CONSUMPTION:

160 W (U.S.A.) 150 W (IEC) 310 VA (CSA)

140 W (Multiple) 400 W (Maximum output)

DIMENSIONS:

434 mm(W) x 112 mm(H) x 393 mm(D)

(including rubber feed, control knobs, and terminals)

WEIGHT:

8.7 kg

* Design and specifications are subject to change, for improvement, without prior notice.

NOTE: The following codes correspond to the appropriate models.

E1 for Asia, E2 for Europe, E3 for U.S.A., EC for Canada and EK for U.K.

This Service Manual is prepared based on E2.

CONTROLS AND THEIR DESCRIPTION

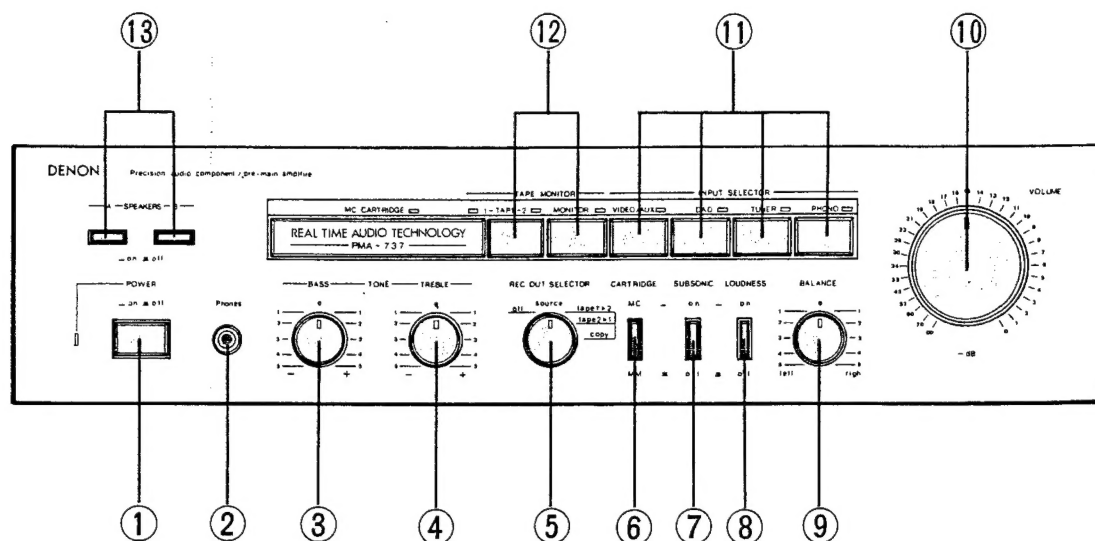


Fig. 1

- | | |
|--|---|
| <p>① POWER & LED Indicator (Power Switch & LED Indicator)</p> <p>② PHONES (Head Phone Jack)</p> <p>③ BASS (BASS Control Knob)</p> <p>④ TREBLE (TREBLE Control Knob)</p> <p>⑤ REC OUT SELECTOR (Recording out Changeover Switch)
 off, ● source, ● tape-1 ► 2, ● tape-2 ► 1</p> <p>⑥ CARTRIDGE (Cartridge Changeover Switch)
 MC, MM</p> <p>⑦ SUBSONIC (Subsonic Filter Switch)</p> | <p>⑧ LOUDNESS (Loudness Switch)</p> <p>⑨ BALANCE (Balance Control Knob)</p> <p>⑩ VOLUME (Main Volume Control Knob)</p> <p>⑪ INPUT SELECTOR (Input Changeover Switch)
 ● Phono, ● tuner, ● DAD, ● VIDEO/AUX</p> <p>⑫ TAPE MONITOR (Tape Monitor Switch)
 ● 1-TAPE-2, ● MONITOR</p> <p>⑬ SPEAKERS (Speaker Changeover Switch)
 ● system-A, ● system-B</p> |
|--|---|

CONNECTIONS

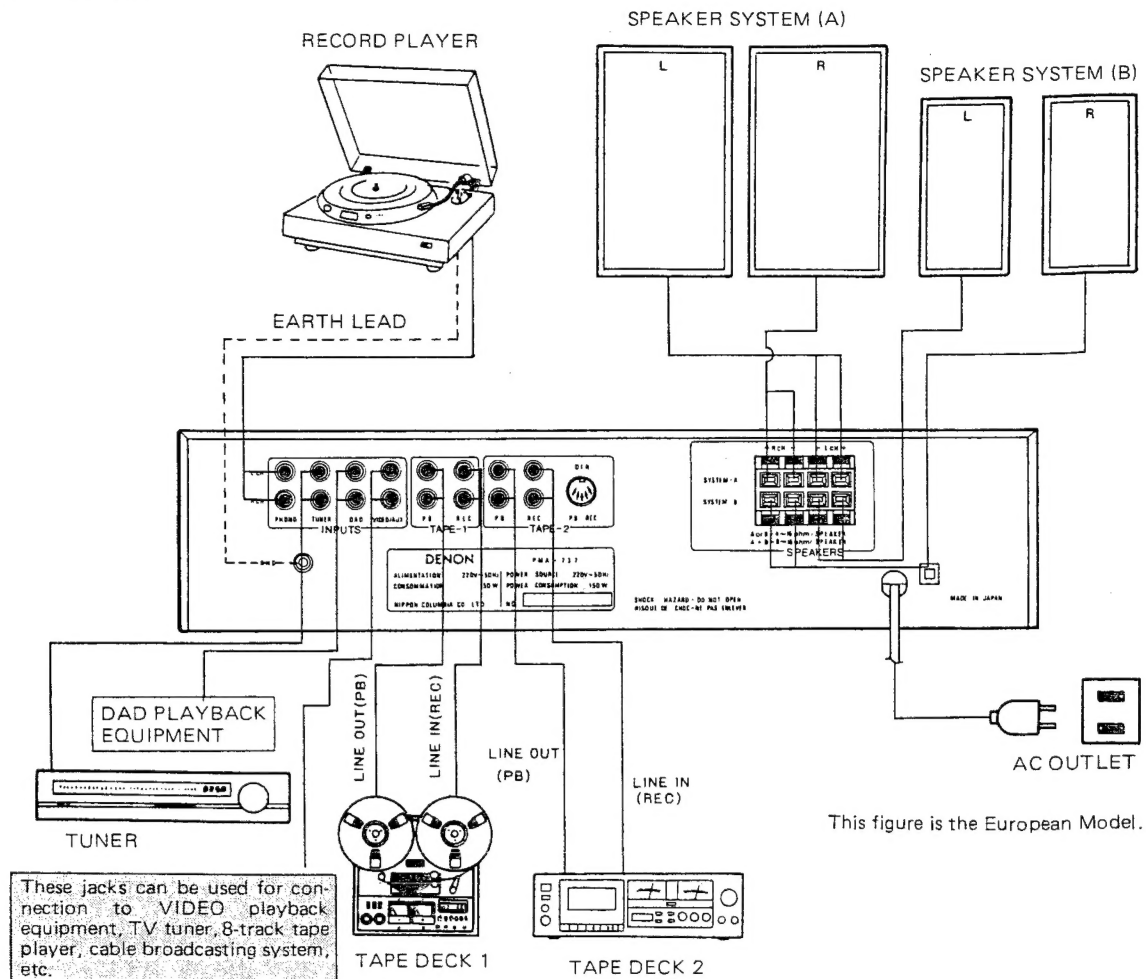


Fig. 2

• Make Connections with Caution

- Do not connect Power cord to AC outlet until all connections completed.
- Distinguish Left and Right. Be sure connect L to L, and R to R.
- Insert the Plugs snugly. Improper connections may invite noise.
- AC outlets of the unit accept Audio equipment only: do not connect hair dryer etc. to the outlets.
- Do not tie Pin plug with Power cord or lay it along power transformer: it may invite hum and noise.
- "PHONO" input terminal is very highly sensitive. Be sure connect Pin cord to it or may induce hum from the Speakers.

For USA, CANADA and ASIA model only

AC OUTLETS

AC OUTLETS of the Unit accept Tuner, Record Player, Tape Deck etc. which are used with the unit.
SWITCHED (100W max):

Power is turned on-off by the Power Switch.

UNSWITCHED (250W max):

Always alive independent of Power Switch.

FOR LINE VOLTAGE PROVIDED MODEL, PLEASE REFER FOLLOWING INSTRUCTION.

• LINE VOLTAGE (Voltage changeover switch) (For ASIA model only)

- * It is possible to change the voltage by the customer to turn the VOLTAGE SELECTOR KNOB on the back panel for appropriate voltage using by a screw driver.
- * Do not twist the VOLTAGE SELECTOR KNOB by abnormal force that may damage it.
- * If the voltage change is not smoothly made, please ask for the qualified service personnel.

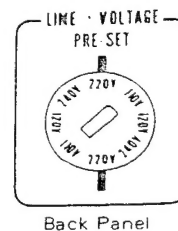


Fig. 3

BLOCK, LEVEL DIAGRAM

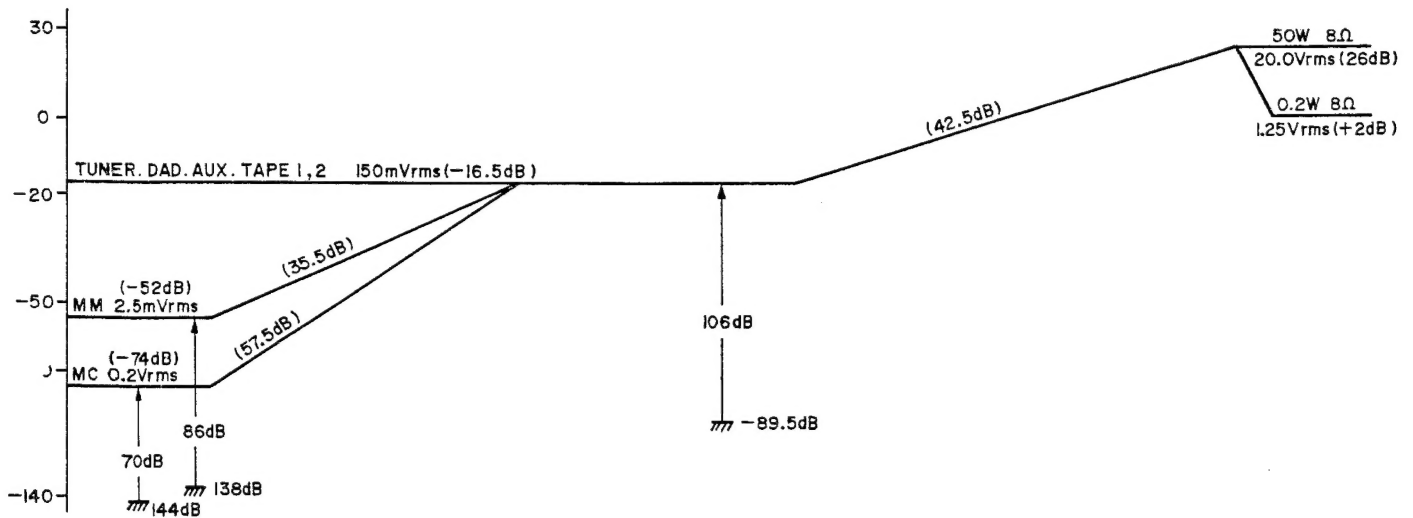
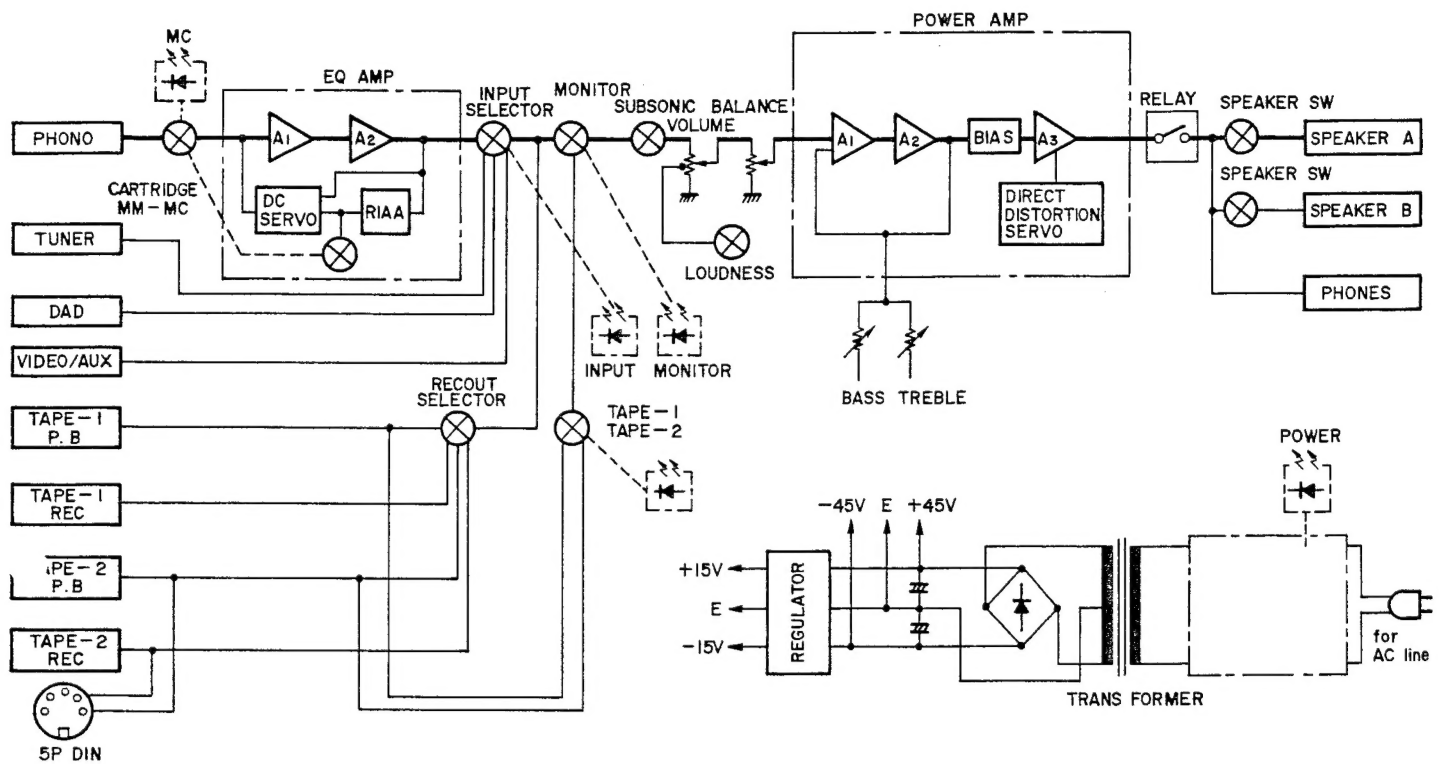


Fig. 4

METHOD OF ADJUSTMENTS

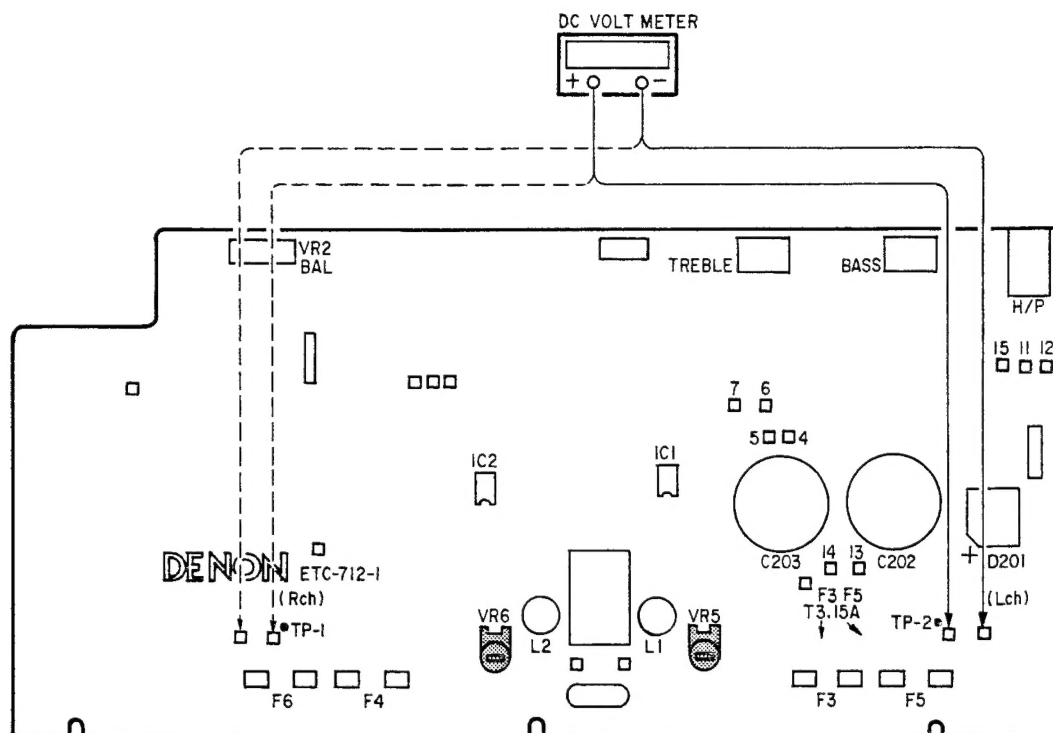



Fig. 5


ADJUSTMENT

IDLING CURRENT (Fig. 5)

● SETUP

1. Lay the unit at an ordinary position away from a direct current from a cooler or fan. Do the adjustment at a temperature between 15°C and 30°C.
2. Set controls as follows.
 POWER SWITCH → off ()
 VOLUME CONTROL → fully counterclockwise. (∞)
 SPEAKER Terminals → open: do not connect the speakers, dummy load etc.

● Adjustment

1. Remove Top cover and turn VR5 (Lch) and VR6 (Rch) of ETC0712B (TONE & POWER Unit) fully counterclockwise. And then connect DC Voltmeter to Test point (Lch TP2, Rch TP1).
2. Connect Power cord to AC outlet, and turn Power Switch "on" (). Within 10 seconds turn VR5 and VR6 clockwise so that the DC voltmeter reads
 $1 \pm 0.5 \text{ mVDC}$
3. Then after 10 ~ 15 minutes warmup adjust VR5 and VR6 so that the DC Voltmeter reads
 $16 \pm 2 \text{ mVDC}$

ETC0711 INPUT & EQ. UNIT

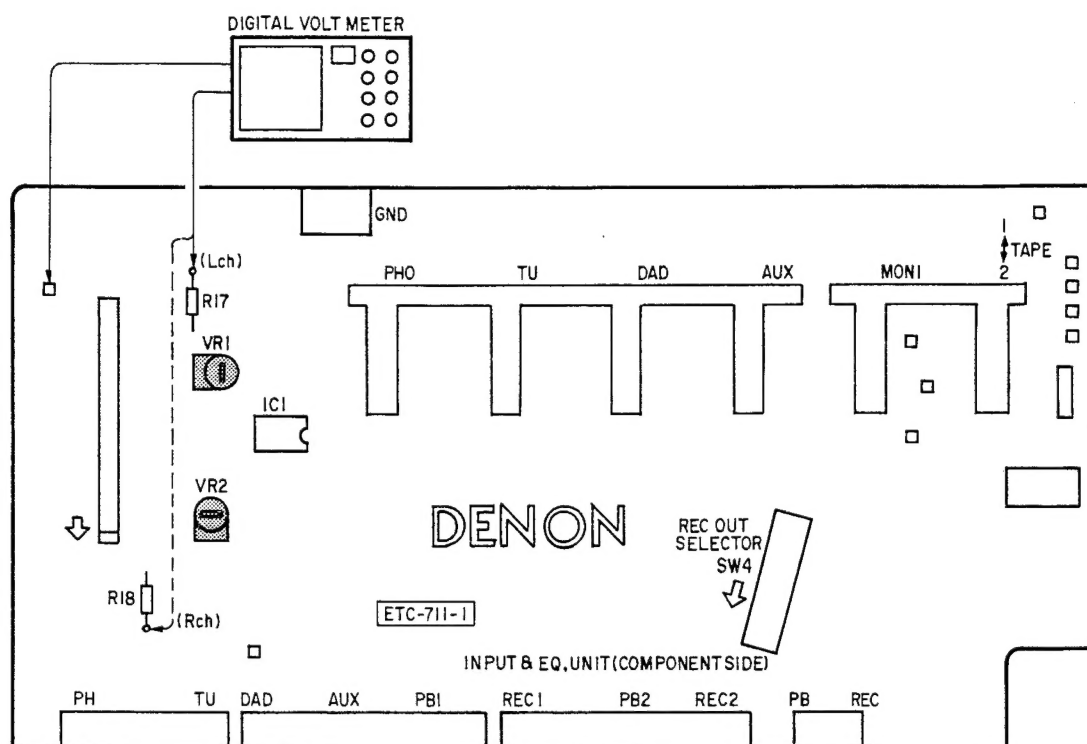



Fig. 6

PHONO BALANCE (Fig. 6)

• Setup

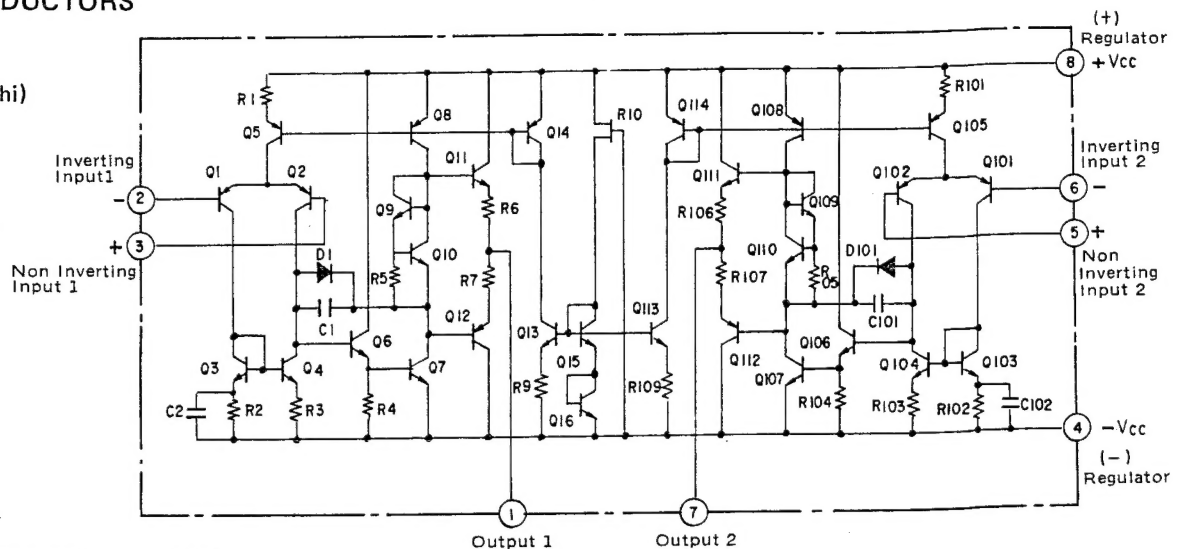
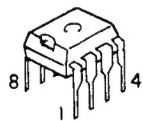
1. Insert short-pin to "PHONO" input terminal.
2. Connect Digital Voltmeter (0.01 ~ 1 mVDC measurable) to "Test pin".
3. Connect Digital Voltmeter to Test point (Lch TP: R17, Rch TP: R18).
4. Set REC OUT SELECTOR to "source", INPUT SELECTOR to "PHONO" and Cartridge Switch to "MM" position, and turn Volume Control fully counterclockwise.

• Adjustment (Be sure to set REC OUT SELECTOR Switch to "source")

1. Turn Power switch "on ()" and after about 2 minutes do the adjustment as follows.
 - Adjust VR1 (100Ω semi-fixed resistor) so that the Lch Digital Voltmeter reads below 0 VDC ± 0.5 mVDC.
 - Adjust VR2 (100Ω semi-fixed resistor) so that the Rch Digital Voltmeter reads below 0 VDC ± 0.5 mVDC.

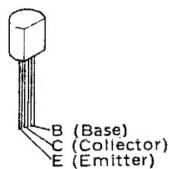
SEMICONDUCTORS

- IC's
- M5218P
- (Mitsubishi)

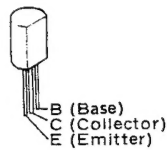


- TRANSISTORS (include FET)

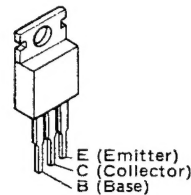
2SC1841(E/F)
2SC1815(BL)
2SA1015(Y)



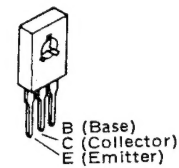
2SA1145(O/Y)
2SC2705(O/Y)



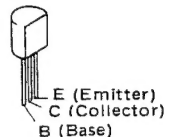
2SC2238(Y)...Black
2SA968(Y)...Green



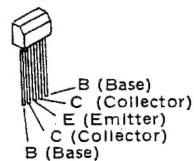
2SC2824(Y/O)



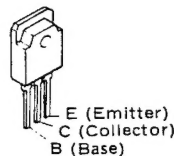
2SA850(D)/(E)
2SC1735(D)/(E)



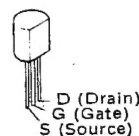
2SC1583(G)



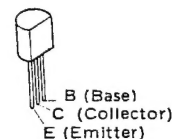
2SA1106(O)/(Y)
2SC2581(O)/(Y)



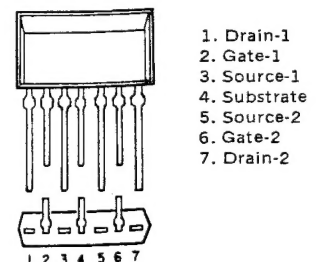
FET
2SK373(Y)



2SC2878(A/B)

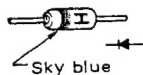


FET
2SK389(BL)/(V)



- DIODES (include LED, Thermistor & Posistor)

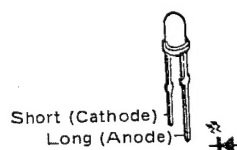
1S2076



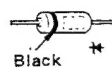
1S2076A



SEL1110R(Red)
SEL1310G(Green)



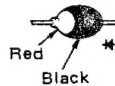
HZ5C-1
HZ15-2
HZ16-2



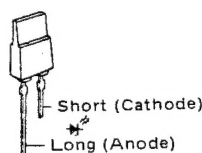
ID2C-1



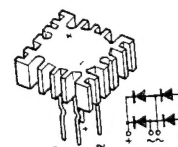
KB-265



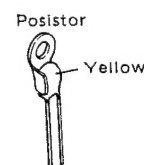
PR5552K-1(Red)



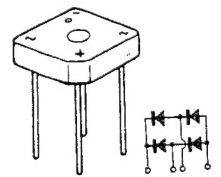
D5FB20...for E2, EK



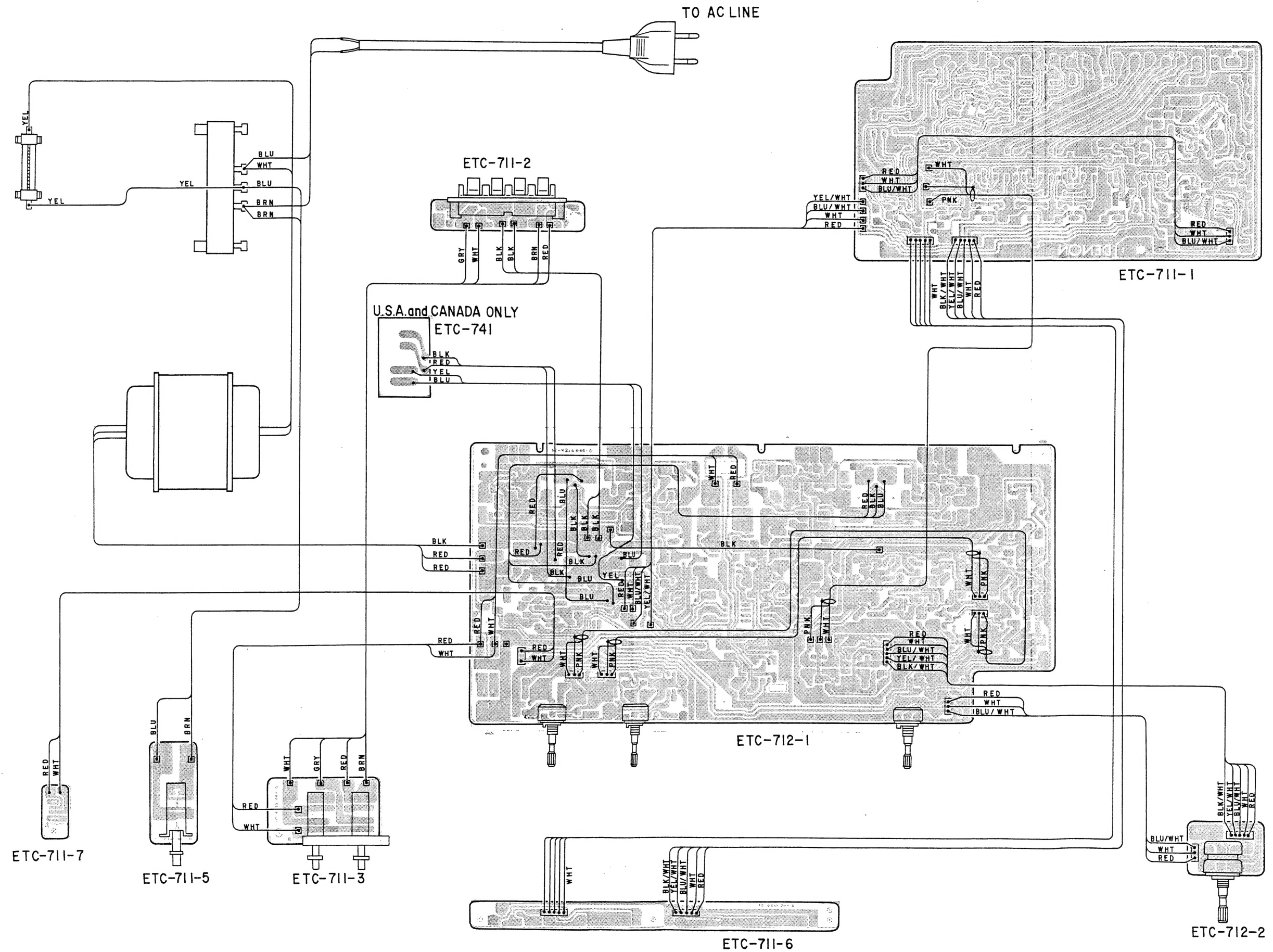
PTH487A01BD222TS



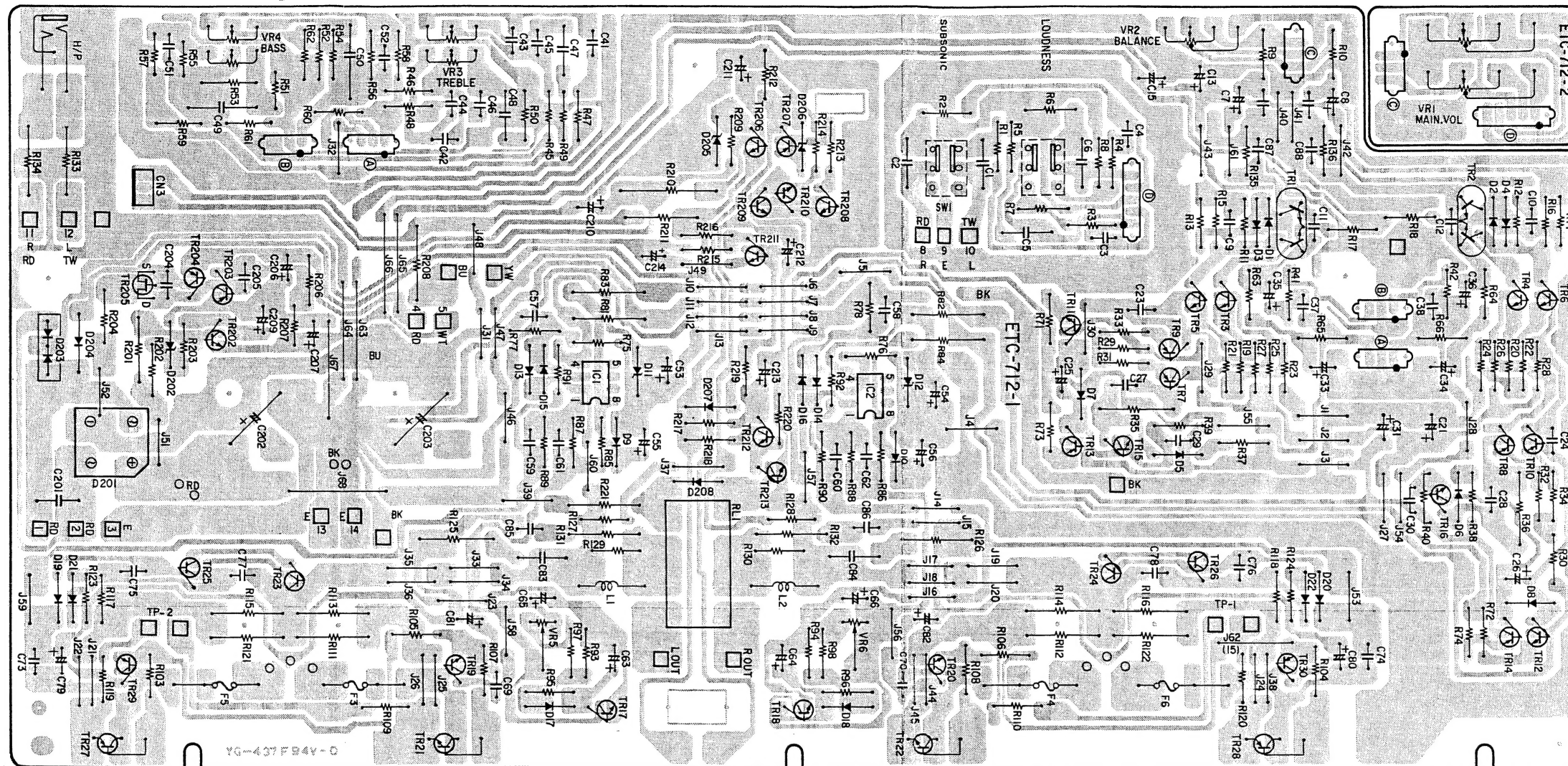
RB402ULF-F...for E1, E3



CONNECTION DIAGRAM
(This figure is the specifications of E2.)



PRINTED WIRING BOARD PATTERNS AND PARTS LIST
ETC0712B TONE & POWER UNIT



ETC0712C TONE & POWER UNIT for E3
(Same as ETC0712B except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTOR		
D201	2760349009	RB402ULF-F (CHANGE)
RESISTORS		
R009, 010	2412092002	1k ohm ±5% 1/4W CARBON (CHANGE)
R111, ~116	2442013080	0.22 ohm ±5% 1W METAL OXIDE (N. B) (CHANGE)
R121, 122	2442013080	0.22 ohm ±5% 1W METAL OXIDE (N. B) (CHANGE)
CAPACITORS		
C011, 012	2533645008	560pF ±5% 50V CERAMIC (CHANGE)
C305, 306	2533635005	220pF ±5% 50V CERAMIC (DELETE)
C307, 308	2533645008	560pF ±5% 50V CERAMIC (DELETE)

Ref. No.	Part No.	Part Name & Descriptions
C311, 312	2531026001	0.047μF +80,-20% 50V CERAMIC (DELETE)
OTHER PARTS		
F003 ~006	2061039089	FUSE 3.15(A) (CHANGE)
R231, 232 (J61, J42)	2090008120	JUMPER (P=10mm) (CHANGE)

ETC0712D TONE & POWER UNIT for E1
(Same as ETC0712B except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
D201	2760349009	RB402ULF-F (CHANGE)
RESISTOR		
R009, 010	2412092002	1k ohm ±5% 1/4W CARBON (CHANGE)
CAPACITORS		
C011, 012	2533645008	560pF ±5% 50V CERAMIC (CHANGE)
C305, 306	2533635005	220pF ±5% 50V CERAMIC (DELETE)
C307, 308	2533645008	560pF ±5% 50V CERAMIC (DELETE)
C311, 312	2531026001	0.047μF +80,-20% 50V CERAMIC (DELETE)
OTHER PARTS		
F003 ~006	2061035009	FUSE 3.15A(T) (CHANGE)
R231, 232 (J61, J42)	2090008120	JUMPER (P=10mm) (CHANGE)

ETC0712F TONE & POWER UNIT for EK
(Same as ETC0712B except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
R009, 010	2412092002	1k ohm ±5% 1/4W CARBON (CHANGE)
CAPACITORS		
C011, 012	2533645008	560pF ±5% 50V CERAMIC (CHANGE)
C305, 306	2533635005	220pF ±5% 50V CERAMIC (DELETE)
C307, 308	2533645008	560pF ±5% 50V CERAMIC (DELETE)
C311, 312	2531026001	0.047μF +80,-20% 50V CERAMIC (DELETE)
OTHER PARTS		
R231, 232 (J61, J42)	2090008120	JUMPER (P=10mm) (CHANGE)

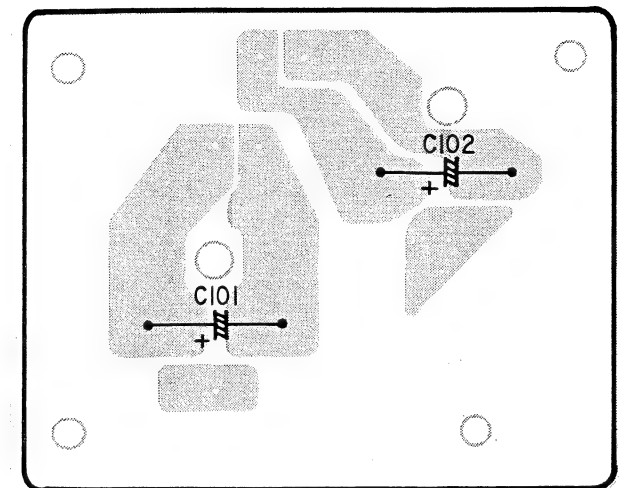
ETC0712B TONE & POWER UNIT PARTS LIST for E2.

Ref. No.	Part No.	Part Name & Descriptions		
SEMICONDUCTORS				
IC001, 002	2630257001	M5218P	MITSUBISHI	IC
TR001, 002	2730181006	2SC1583(G)	TRANSISTOR	
TR003 ~006	2730235020	2SC1841(E/F)	TRANSISTOR	
TR007 ~010	2710168007	2SA1145(O/Y)	TRANSISTOR	
TR011, 012	2730281003	2SC2705(O/Y)	TRANSISTOR	
TR013, 014	2710168007	2SA1145(O/Y)	TRANSISTOR	
TR015, 016	2730281003	2SC2705(O/Y)	TRANSISTOR	
TR017, 018	2730198015	2SC1815(BL)	TRANSISTOR	
TR019, 020	2730199001	2SC2238(Y)	TRANSISTOR	
TR023 ~026	2710102005	2SA1015(Y)	TRANSISTOR	
TR029, 030	2710104003	2SA968(Y)	TRANSISTOR	
TR202	2730163040	2SC1735(D)/(E)	TRANSISTOR	
TR203	2710102005	2SA1015(Y)	TRANSISTOR	
TR204	2710072025	2SA850(D)/(E)	TRANSISTOR	
TR205	2750042002	2SK373(Y)	FET	
TR206	2730236029	2SC2824(Y/O)	TRANSISTOR	
TR207	2710102005	2SA1015(Y)	TRANSISTOR	
TR208 ~210	2730198015	2SC1815(BL)	TRANSISTOR	
TR211	2730253015	2SC2878(A)/(B)	TRANSISTOR	
TR212	2730198015	2SC1815(BL)	TRANSISTOR	
TR213	2730235020	2SC1841(E/F)	TRANSISTOR	
D005, 006	2760049008	1S2076	DIODE	
D007, 008	2760216019	KB-265	DIODE	
D009 ~012	2760253001	HZ15-2	ZENER	
D013 ~018	2760049008	1S2076	DIODE	
D201	2760356005	D5FB20	DIODE	
D202	2760256008	HZ-16-2	ZENER	
D203	2760151006	1D2C-1	DIODE	
D204	2760057016	V06C	DIODE	
D205	2760256008	HZ-16-2	ZENER	
D206	2760236031	HZ5C-1	ZENER	
D208	2760049011	1S2076A	DIODE	
RESISTORS (not include Carbon Film ±5%, 1/4W Type)				
R007, 008	2420203003	10M ohm	±10% 1/4W	CARBON COMPOSIT
R023, 024	2412314036	750 ohm	±5% 1/4W	CARBON (N.B)
R025 ~028	2412314023	470 ohm	±5% 1/4W	CARBON (N.B)
R029, 030	2412314007	100 ohm	±5% 1/4W	CARBON (N.B)
R035, 036	2440055024	15k ohm	±5% 1W	METAL OXIDE(N.B)
R037 ~040	2412321045	220 ohm	±5% 1/4W	CARBON (N.B)
R071 ~074	2412321061	47 ohm	±5% 1/4W	CARBON (N.B)

Ref. No.	Part No.	Part Name & Descriptions	
R075, 076	2412321003	1k ohm	$\pm 5\%$ 1/4W CARBON (N.B)
R081 ~084	2440049027	4.7k ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R103, 104	2412321032	4.7 ohm	$\pm 5\%$ 1/4W CARBON (N.B)
R105, 106	2412314007	100 ohm	$\pm 5\%$ 1/4W CARBON (N.B)
R107, 108	2412321032	4.7 ohm	$\pm 5\%$ 1/4W CARBON (N.B)
R111 ~116	2442013093	0.33 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R121, 122	2442013093	0.33 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R125, 126	2440017020	10 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R133, 134	2440030023	120 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R201	2440039024	680 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R202	2410201002	4.7k ohm	$\pm 5\%$ 1/2W CARBON
R204	2440039024	680 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R208	2440037026	470 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R209	2410205008	6.8k ohm	$\pm 5\%$ 1/2W CARBON
R210	2440094027	470 ohm	$\pm 5\%$ 2W METAL OXIDE (N.B)
R211	2440043023	1.5k ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
R223, 224	2412321032	4.7 ohm	$\pm 5\%$ 1/4W CARBON (N.B)
R221	2440037026	470 ohm	$\pm 5\%$ 1W METAL OXIDE (N.B)
CAPACITORS (not include Ceramic $\pm 5\%$, $\pm 10\%$, 50V Type)			
C001, 002	2561030067	0.18 μ F	$\pm 5\%$ 100V METALIZED
C005, 006	2551083008	0.082 μ F	$\pm 10\%$ 50V PLASTIC FILM
C007, 008	2544146004	1 μ F	50V ELECTROLYTIC
C009, 010	2551120000	0.001 μ F	$\pm 5\%$ 50V PLASTIC FILM
C013 ~015	2544146004	1 μ F	50V ELECTROLYTIC
C021, 022	2544181001	1 μ F	$\pm 20\%$ 100V ELECTROLYTIC
C023, 024	2534277006	22pF	± 0.25 pF 500V CERAMIC
C025, 026	2544181001	1 μ F	$\pm 20\%$ 100V ELECTROLYTIC
C027, 028	2554079048	0.01 μ F	$\pm 5\%$ 100V PLASTIC FILM
C031, 033	2544181001	1 μ F	$\pm 20\%$ 100V ELECTROLYTIC
C034, 036	2544127007	220 μ F	6.3V ELECTROLYTIC
C035, 036	2544132005	10 μ F	16V ELECTROLYTIC
C041, 042	2551121009	0.0068 μ F	$\pm 5\%$ 50V PLASTIC FILM
C045, 046	2551120013	0.0012 μ F	$\pm 5\%$ 50V PLASTIC FILM
C047, 048	2551122011	0.056 μ F	$\pm 5\%$ 50V PLASTIC FILM
C049, 050	2551122095	0.27 μ F	$\pm 5\%$ 50V PLASTIC FILM
C051, 052	2551121096	0.039 μ F	$\pm 5\%$ 50V PLASTIC FILM

Ref. No.	Part No.	Part Name & Descriptions	
C053 ~056	2544153000	47 μ F	50V ELECTROLYTIC
C063, 064	2544146004	1 μ F	50V ELECTROLYTIC
C065, 066	2544181001	1 μ F	$\pm 20\%$ 100V ELECTROLYTIC
C069, 070	2534285001	47pF	$\pm 5\%$ 500V CERAMIC
C073, 074	2534285001	47pF	$\pm 5\%$ 500V CERAMIC
C079 ~082	2544181001	1 μ F	$\pm 20\%$ 100V ELECTROLYTIC
C083, 084	2551084007	0.1 μ F	$\pm 10\%$ 50V PLASTIC FILM
C201	2531053003	0.01 μ F	+100, -0% 500V CERAMIC
C202, 203	2546067000	8200 μ F	56V ELECTROLYTIC
C206, 207	2544146004	1 μ F	50V ELECTROLYTIC
C209	2544153000	47 μ F	50V ELECTROLYTIC
C210	2544059007	100 μ F	63V ELECTROLYTIC
C211	2544146004	1 μ F	50V ELECTROLYTIC
C212	2544161034	330 μ F	6.3V ELECTROLYTIC
C213	2544129005	47 μ F	10V ELECTROLYTIC
C214	2544060067	3.3 μ F	100V ELECTROLYTIC
C311, 312	2531026001	0.047 μ F	+80, -20% 50V CERAMIC
COILS, RELAY			
L001, 002	2350007007	INDUCTOR	1 μ H
RL001	2140041008	RELAY	
VARIABLE RESISTORS, SWITCH			
VR001	2110425007	VARIABLE RESISTOR	100k ohm MAIN
VR002	2110198004	VARIABLE RESISTOR	250k ohm BALANCE
VR003	2110309107	VARIABLE RESISTOR	50k ohm TREBLE
VR004	2110309110	VARIABLE RESISTOR	100k ohm BASS
VR005	2116025087	SEMI FIXED RESISTOR	4.7k ohm
VR006	2124483006	2P PUSH SWITCH	LOUD/SUB SONIC
OTHER PARTS			
F003 ~006	2221061208	P.W. BOARD	
	2090008120	JUMPER P=10mm	USED 62
	EP-5667H2	TERMINAL (WRAPPING PIN)	USED 23
	2090008162	JUMPER P=20mm	USED 6
	2090008104	JUMPER P=15mm	USED 1
	2061015074	FUSE 3.15A	USED 4
	2020022008	FUSE HOLDER	USED 8
	2048047007	H/P JACK	
	2030170005	1P CONTACT	
	2050190036	3P NH CONNECTOR BASE	
	2050185038	3P WIRE HOLDER	USED 6
	2050185054	5P WIRE HOLDER	USED 2
	4450033005	WIRE CLAMP BAND	USED 4

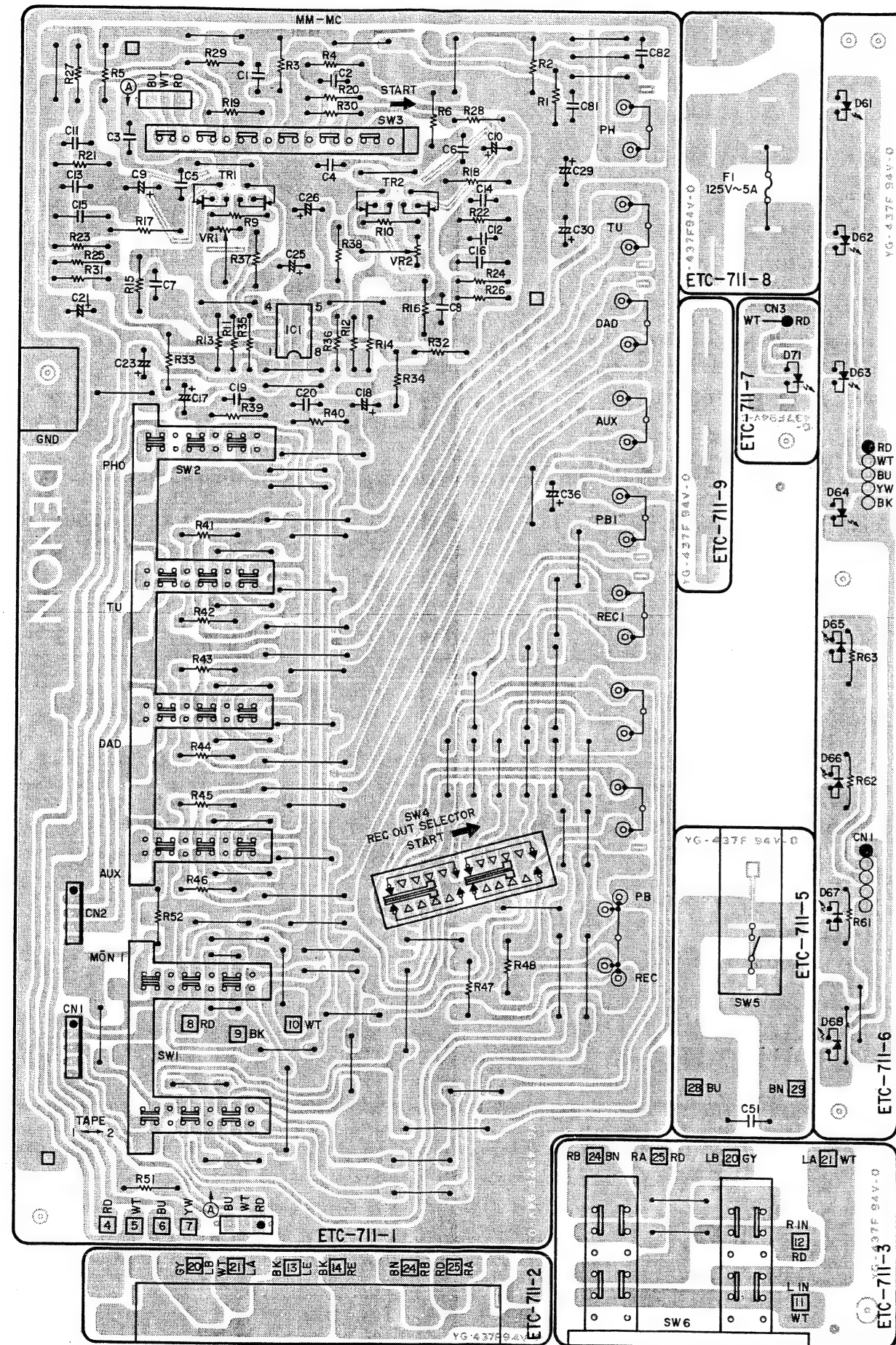
ETC0741 C-UNIT for E3 only



ETC0741 C-UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions	
CAPACITORS			
C101, 102	2546089004	8200μF	56V ELECTROLYTIC
OTHER PARTS			
	2221089002 EP-5667H3	P.W. BOARD TERMINAL (WRAPPING PIN) USED 4	

ETC0711 INPUT & EQ UNIT



ETC0711 INPUT & EQ UNIT PARTS LIST for E2.

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
IC001	2630257001	M5218P MITSUBISHI IC
TR001, 002	2750045009	2SK389(BL)/(V) FET
D061 ~064	3939052003	SEL1310G GREEN LED
D065 ~067	3939051004	SEL1110R RED LED
D068	3939052003	SEL1310G GREEN LED
D071	3939154008	PR5552K-1 RED LED
RESISTORS (not include Carbon Film $\pm 5\%$, 1/4W Type)		
R017, 018	2420203003	10M ohm $\pm 10\%$ 1/4W CARBON COMPOSIT
R035, 036	2412370041	2k ohm $\pm 5\%$ 1/4W CARBON (N.B)
CAPACITORS (not include Ceramic $\pm 5\%$, $\pm 10\%$, 50V Type)		
C001, 002	2531024003	0.01 μ F +80,-20% 50V CERAMIC
C007, 008	2551120084	0.0047 μ F $\pm 5\%$ 50V PLASTIC FILM
C009, 010	2549011024	10 μ F 50V ELECTROLYTIC
C011, 012	2551120013	0.0012 μ F $\pm 5\%$ 50V PLASTIC FILM
C013, 014	2551121041	0.015 μ F $\pm 5\%$ 50V PLASTIC FILM
C015, 016	2551122011	0.056 μ F $\pm 5\%$ 50V PLASTIC FILM
C017, 018	2544164015	10 μ F 25V ELECTROLYTIC
C019, 020	2551120068	0.0033 μ F $\pm 5\%$ 50V PLASTIC FILM
C021, 023, 036	2544146004	1 μ F 50V ELECTROLYTIC
C025, 026	2544135002	47 μ F 16V ELECTROLYTIC
C029, 030	2544146004	1 μ F 50V ELECTROLYTIC
C051	2538003014	0.0047 μ F $\pm 20\%$ 400V CERAMIC
C301, 302	2531026001	0.047 μ F +80,-20% 50V CERAMIC
VARIABLE RESISTORS		
VR001, 002	2116025016	SEMI FIXED RESISTOR 100 ohm
SWITCHES		
SW001	2124488001	2P PUSH SWITCH TAPE MONITOR
SW002	2124487002	4P PUSH SWITCH INPUT SEL.
SW003	2124485004	SLIDE SWITCH (6-2) REMOTE MM/MC
SW004	2124187001	SLIDE SWITCH (4-4) REMOTE REC OUT
SW005	2124154063	POWER SWITCH
SW006	2124486003	2P PUSH SWITCH SP

Ref. No.	Part No.	Part Name & Descriptions
OTHER PARTS		
L001, 002 (J7,J5)	2221060	P.W. BOARD
	2090008120	JUMPER P=10mm USED 60
	EP-5667H2	TERMINAL (WRAPPING PIN) USED 24
	2350009018	INDUCTOR 2.2 μ H
	2090008146	JUMPER WIRE P=5mm USED 2
	2090008104	JUMPER WIRE P=15mm USED 14
	2050185038	3P WIRE HOLDER USED 2
	2050136032	5P CONNECTOR BASE
	2050190052	5P NH CONNECTOR BASE
	4140240001	EARTH PLATE
	1220109007	BLIND SHEET
	4410412200	LED HOLDER
	2048059008	DIN JACK (5P)
	2050151004	8P PUSH TERMINAL FOR SP.
	2050150005	4P CONNECTOR BASE
	2050152003	6P CONNECTOR BASE USED 2
	2034185083	3P CONNECTOR CORD
	2038132003	5P CONNECTOR CORD

ETC0711B INPUT & EQ. UNIT PARTS LIST for E3 (Same as ETC0711 except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
CAPACITORS		
C001, 002	2531024003	0.01 μ F +80,-20% 50V CERAMIC (DELETE)
C003, 004	2533635005	220pF \pm 5% 50V CERAMIC (CHANGE)
C051	2568019007	0.01 μ F \pm 20% 125V METALIZED (CHANGE)
C061, ~064	2531009002	0.0068 μ F \pm 10% 50V CERAMIC (DELETE)
C081, 082	2533635005	220pF \pm 5% 50V CERAMIC (DELETE)
C083	2533627000	100pF \pm 5% 50V CERAMIC (DELETE)
C301, 302	2531026001	0.047 μ F +80,-20% 50V CERAMIC (DELETE)
C303, 304	2533645008	560pF \pm 5% 50V CERAMIC (DELETE)
C309, 310	2531005006	0.0015 μ F \pm 10% 50V CERAMIC (DELETE)

Ref. No.	Part No.	Part Name & Descriptions
SWITCH		
SW005	2124154034	PUSH SWITCH (CHANGE)
OTHER PARTS		
L001, 002 (J7,J5)	2048059008 EP-5667H2	DIN JACK (5P) (CHANGE) TERMINAL (WRAPPING PIN) (ADD)
	EP-5870	FUSE HOLDER (ADD)
	2090008120	JUMPER P=10mm (CHANGE)

ETC0711D INPUT & EQ. UNIT PARTS LIST for E1. (Same as ETC0711 except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
CAPACITORS		
C001, 002	2531024003	0.01 μ F +80,-20% 50V CERAMIC (DELETE)
C003, 004	2533635005	220pF \pm 5% 50V CERAMIC (CHANGE)
C061 ~064	2531009002	0.0068 μ F \pm 10% 50V CERAMIC (DELETE)
C081, 082	2533635005	220pF \pm 5% 50V CERAMIC (DELETE)
C083	2533627000	100pF \pm 5% 50V CERAMIC (DELETE)
C301, 302	2531026001	0.047 μ F +80,-20% 50V CERAMIC (DELETE)

Ref. No.	Part No.	Part Name & Descriptions
C303, 304	2533645008	560pF \pm 5% 50V CERAMIC (DELETE)
C309, 310	2531005006	0.0015 μ F \pm 10% 50V CERAMIC (DELETE)
OTHER PARTS		
L001, 002 (J7,J5)	EP-5667H2	TERMINAL (WRAPPING PIN) (ADD)
	2048059008 EP-5870	DIN JACK (5P) (DELETE) FUSE HOLDER (ADD)
	2090008120	JUMPER P=10mm (CHANGE)

ETC0711F INPUT & EQ. UNIT PARTS LIST for EK (Same as ETC0711 except the followings.)

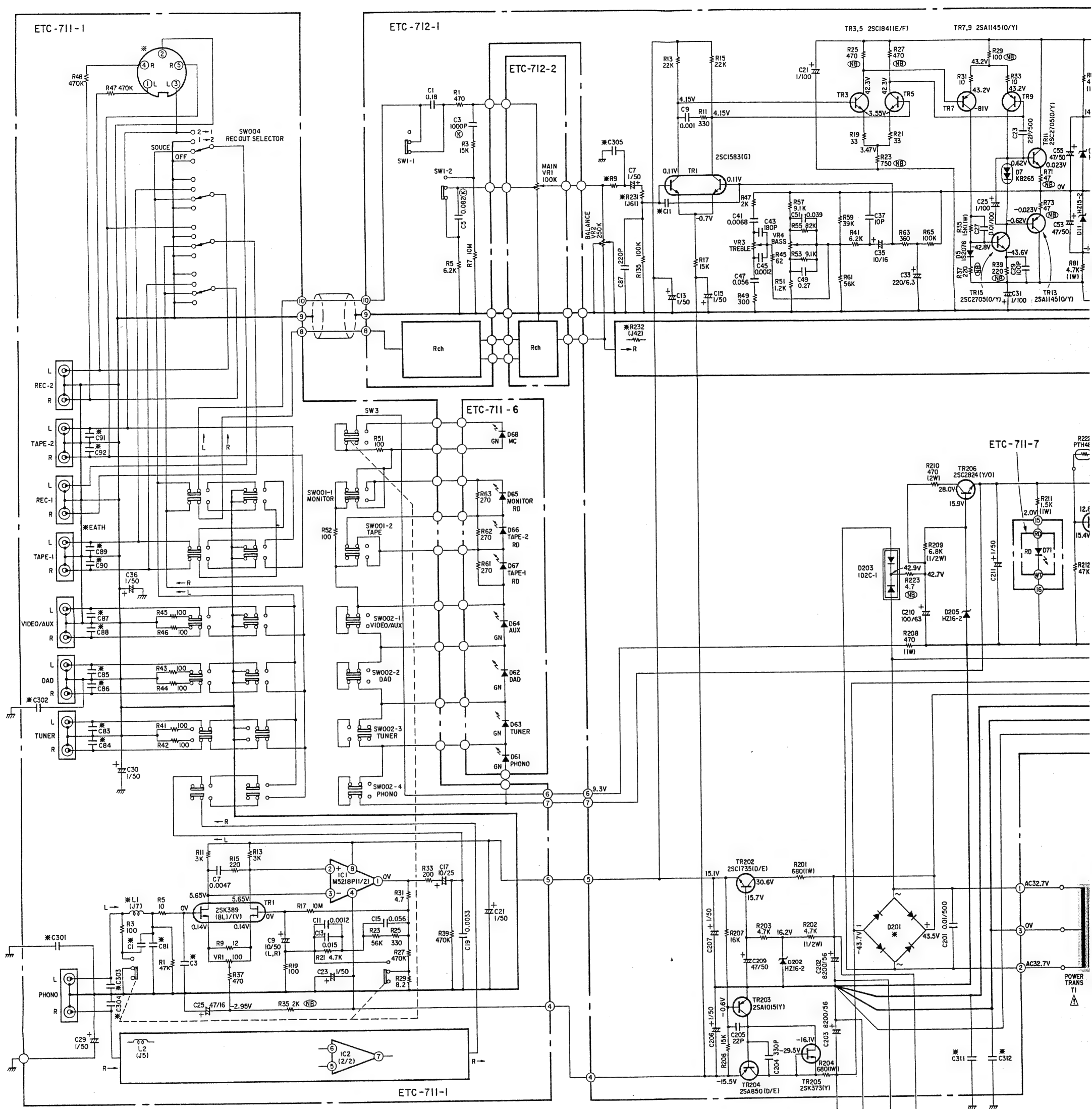
Ref. No.	Part No.	Part Name & Descriptions
CAPACITORS		
C001, 002	2531024003	0.01 μ F +80,-20% 50V CERAMIC (DELETE)
C003, 004	2533635005	220pF \pm 5% 50V CERAMIC (CHANGE)
C061 ~064	2531009002	0.0068 μ F \pm 10% 50V CERAMIC (DELETE)
C081, 082	2533635005	220pF \pm 5% 50V CERAMIC (DELETE)
C083 ~092	2533627000	100pF \pm 5% 50V CERAMIC (DELETE)

Ref. No.	Part No.	Part Name & Descriptions
C301, 302	2531026001	0.047 μ F +80,-20% 50V CERAMIC (DELETE)
C303, 304	2533645008	560pF \pm 10% 50V CERAMIC (DELETE)
C309, 310	2531005006	0.0015 μ F \pm 10% 50V CERAMIC (DELETE)
OTHER PARTS		
L001, 002 (J7,J5)	2090008120	JUMPER P=10mm (CHANGE)

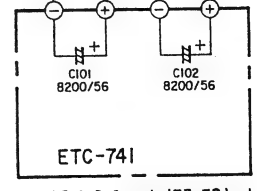
ADDENDUM LIST (Ref. number 100 or older onto in the EXPLODED VIEW.)

Ref. No.	Part Name & Descriptions	Part No.		
		E3 for U.S.A.	EK for U.K.	E1 for Asia
1	BACK PANEL	1050603003	1050601102	1050609007
3	SP TERMINAL UNIT	ETC0711B2	ETC0711F2	ETC0711D2
Δ 4	AC CORD	2062021009	2062020000	2006031026
Δ 5	CORD BUSH	4450020005	MD-2982H	MD-3802
6	INSULATING SHEET	—	4150088004	—
7	7P W TERMINAL	—	2050089008	—
8	FUSE HOLDER	—	2020013101	2020013101
Δ 9	FUSE	—	2061015032 (2.5A)	2061015032 (2.5A)
10	FUSE LABEL	—	5130654017	5130654017
Δ 11	CAPACITOR	2568019007	—	2568003000
12	FTZ LABEL	—	—	—
15	RADIATOR	4170226118	4170226105	4170226105
28	POWER SWITCH UNIT	ETC0711B5	ETC0711F5	ETC0711D5
29	SPEAKER SWITCH UNIT	ETC0711B3	ETC0711F3	ETC0711D3
30	TONE & POWER UNIT	ETC0712C	ETC0712F	ETC0712D
31	VOLUME UNIT	ETC0712C2	ETC0712F2	ETC0712D2
35	INPUT & EQ. UNIT	ETC0711B	ETC0711F	ETC0711D
Δ 37	POWER TRANS	2335486009	2335468001	2335466003
48	INPUT LED UNIT	ETC0711B6	ETC0711F6	ETC0711D6
49	POWER LED UNIT	ETC0711B7	ETC0711F7	ETC0711D7
55	TOP COVER	(1020148019)	1020148019	1020148019
57	SPACER	(1220069008)	1220069008	1220069008
Δ 100	AC OUTLET (3P)	2033922001	—	2033922001
Δ 101	AC OUTLET UNIT	ETC0711B8	—	ETC0711D8
Δ 102	AC OUTLET UNIT	ETC0711B9	—	ETC0711D9
103	DANGEROUS MARK	5138266009	—	—
104	SERIAL NO. PLATE	5130675096	—	—
105	RIVET	4770126016	—	—
106	EARTH LABEL	—	5130140000	—
107	VOLTAGE LABEL	—	5130362008	—
108	BLIND SHEET	—	5130348006	—
109	CAUTION SHEET	—	5130364006	—
Δ 110	VOLTAGE SEL. SWITCH	—	—	2120186006
111	PRESET LABEL	—	—	5150290008
112	FUSE LABEL	5130607080	—	—
113	FUSE	2061023079	—	2061026005
114	FUSE LABEL	5130607006	—	—
115	P.C.B. BRACKET	4121669009	—	—
116	C-UNIT	ETC0741	—	—
117	PLATE (L)	4410452008	—	—
118	PLATE (R)	4410453007	—	—
119	SPACER	1220069040	—	—
SCREWS and NUTS (included Washers)				
303	PAN SCREW WITH S.W 3x8 (BK)	—	4700042005	4700042005
304	NUT M3	—	4756006008	—
318	TOOTH WASHER φ3	—	4753001051	—
319	TOOTH WASHER φ4	—	4753100004	—
320	3T LUG	—	—	—
PACKING & ACCESSORIES				
d.	INST. MANUAL	5111247003	5111213008	5111213008
e.	SAFETY INSTRUCTION	5111041005	—	—
f.	WARRANTY IN ENVELOPE	5158053001	—	5158053001
g.	IMPORTANT LABEL	—	5130372001	—

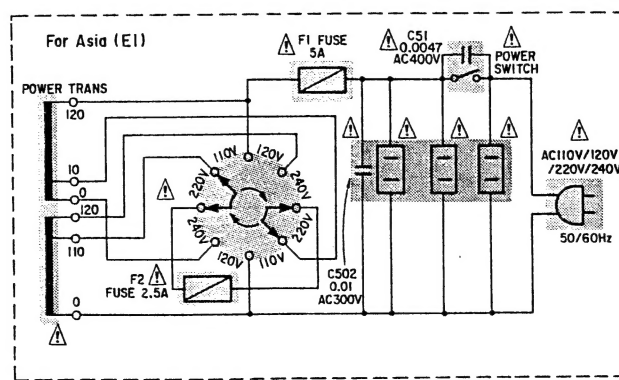
IRING DIAGRAM



UNIT SYMBOL MODEL	ETC-711											ETC-712									
	(J7, J5) L1, 2	C1, 2	C3, 4	C81, 82	C83 ~ 92	C301, 302	C303, 304	C309, 310	C61 ~ 64	5P DIN	R9, 10	(J61, J42) R231, 232	C305, 306	C11, 12	C307, 308	C311, 312	D201	R111 ~ 116 R121, 122			
PMA737E2	2.2μH	CK 0.01μF ㉔	CC 560P	CC 220P	CC 100P	CK 0.047μF ㉔	CC 560P	CK 0.0015μF	CK 0.0068μF	USED	470Ω	1KΩ	CC 220P	CC 220P	CC 560P	CK 0.047μF ㉔	D5F820	0.33Ω (1W)			
E3	JUMPER	—	CC 220P	—	—	—	—	—	—	—	1KΩ	JUMPER	—	CC 560P	—	—	R8402ULF	0.22Ω (1W)			
E1	JUMPER	—	CC 220P	—	—	—	—	—	—	—	1KΩ	JUMPER	—	CC 560P	—	—	R8402ULF	0.33Ω (1W)			
EK	JUMPER	—	CC 220P	—	—	—	—	—	—	USED	1KΩ	JUMPER	—	CC 560P	—	—	D5F820	0.33Ω (1W)			
EC	JUMPER	—	CC 220P	—	—	—	—	—	—	—	1KΩ	JUMPER	—	CC 560P	—	—	R8402ULF	0.22Ω (1W)			



For U.S.A. & Canada (E3, EC) only

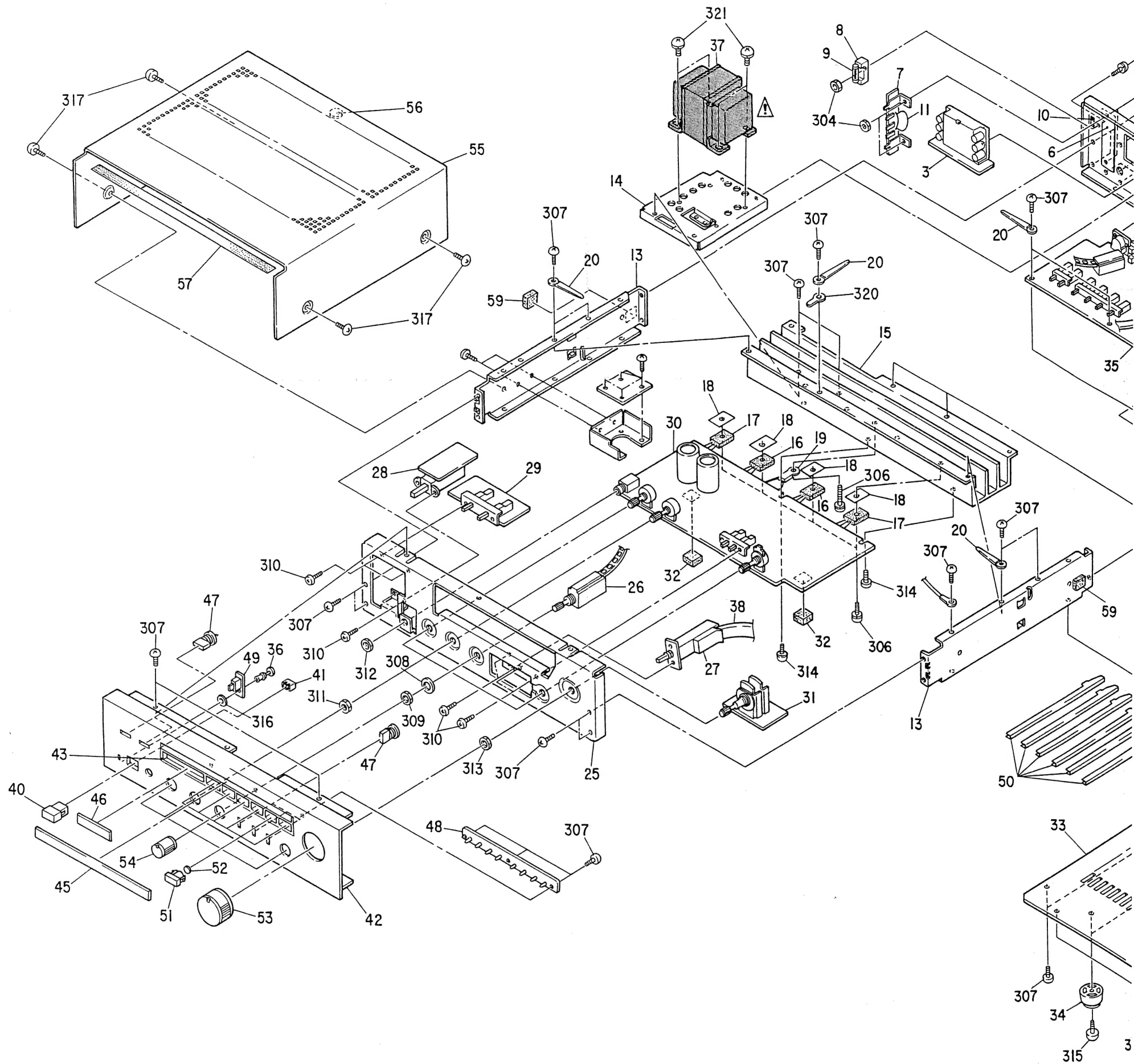


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EXPLODED VIEW OF CHASSIS AND CABINET

(This figure is the specifications of E2.)

when necessary
by the manufacturer



EXPLODED VIEW OF CHASSIS AND CABINET PARTS LIST

Notes: 1. See addendum list below for the parts with asterisk (*) on the Ref. No. and the other parts not included in the list. See 2. This list is prepared based on E2 & Gold Version.

Ref. No.	Part No.	Part Name & Descriptions
*1	1050601102	BACK PANEL
2	2050071016	TERMINAL ASS'Y
*3	ETC07112	SP. TERMINAL UNIT
*4	2062002031	AC CORD
*5	4450020005	CORD BUSH
*6	4150088004	INSULATING SHEET
*7	2050089008	7P.W TERMINAL
*8	2020013101	FUSE HOLDER
*9	2061015032	FUSE 2.5A
*10	5130654017	FUSE LABEL
*11	2568023006	METALIZED CAP. 0.01μF/250V
*12	5130716023	FTZ LABEL
13	4110352204	SIDE CHASSIS
14	4110428002	TRANS CHASSIS ASS'Y
*15	4170226105	RADIATOR
16	2730273011	TRANSISTOR 2SC2581 (O)/(Y)
17	2710160018	TRANSISTOR 2SA1106 (O)/(Y)
18	4150234007	INSULATING SHEET
19	2760289004	POSISTOR PTH487A01BD222TS
20	EP-4772	CORD HOLDER USED 4
21	4121610003	HOLD BRACKET (6 GANG)
22	4630299009	SPRING USED 6
23	4410425006	SHEET (6 GANG)
24	4770210003	PUSH RIVET (L=4.5) USED 7

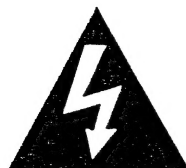
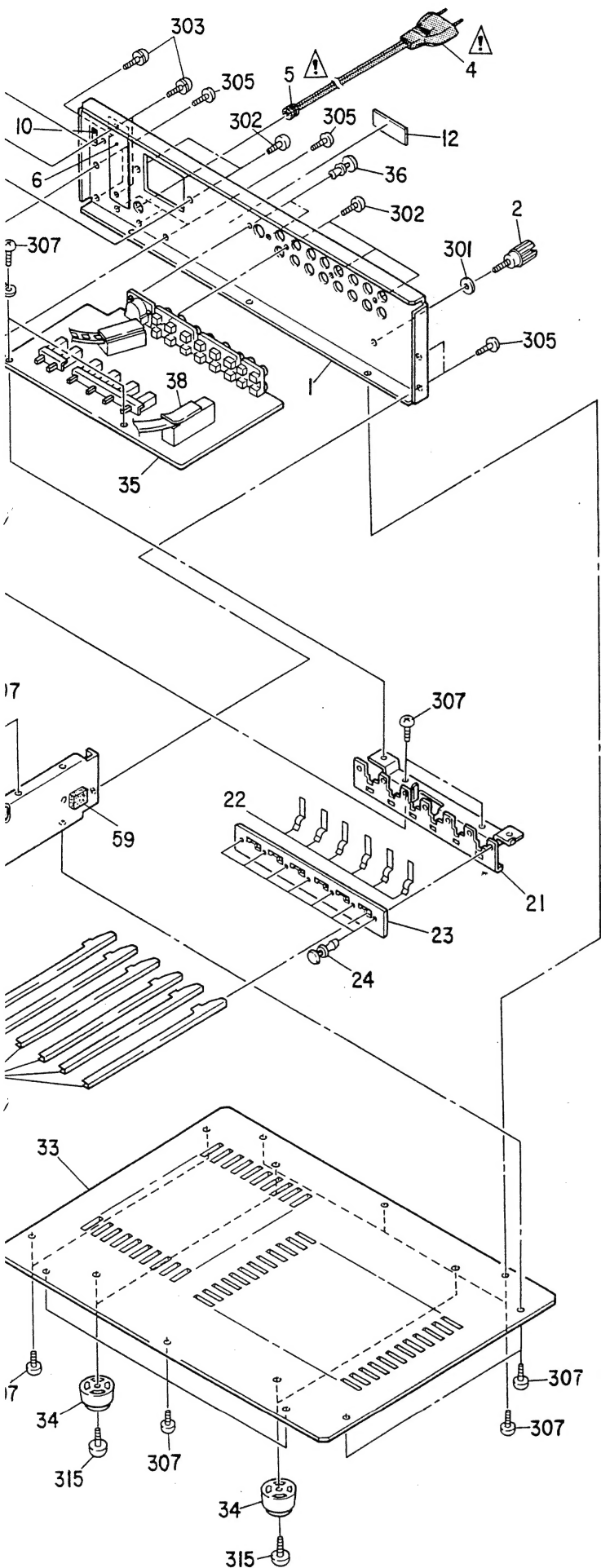
Ref. No.	Part No.	Part Name & Descriptions
25	4110417301	FRONT CHASSIS ASS'Y
26	2120222012	ROTARY REMOTE
27	2124484005	1P PUSH REMOTE
*28	ETC07115	POWER SW UNIT
*29	ETC07113	SPEAKER SW UNIT
*30	ETC0712B	TONE & POWER UNIT
*31	ETC0712B2	VOLUME UNIT
32	4610121016	CUSHION
33	1050325200	BOTTOM COVER
34	1048001002	FOOT USED 4
*35	ETC0711	INPUT & EQ. UNIT
36	4770096007	PUSH RIVET (L=5.5) USED 3
*37	2335462007	POWER TRANS
38	4350052018	FLEXIBLE SLIDER
*39	4450033005	WIRE CLAMP BAND USED 15
40	1130515008	PUSH KNOB (A) FOR POWER
41	1140056007	FLEXIBLE RING
42	1441222200	FRONT PANEL ASS'Y
43	1460682203	WINDOW PANEL
44		
45	1430361004	WINDOW
46	1449001009	ESC PLATE
47	1130513204	PUSH KNOB (B) ASS'Y USED 5
*48	ETC07116	INPUT LED UNIT
*49	ETC07117	POWER LED UNIT

Ref. No.	Part No.	Part Name & Descriptions
50	4121069007	CONNECTING BRACKET
51	1130579109	PUSH KNOB (C) FOR INPUT
52	1220039012	SPACER
53	1120449003	KNOB (A) FOR MAIN
54	1120450005	KNOB (B) FOR BAL. SEL. BASS. TREBLE USED 4
*55	1020148019	TOP COVER
56	1040034006	STOPPER
*57	1220069008	SPACER
58		
59	4618130009	CUSHION (A)
60		
61		
62		
63		
64		
65		
66		
67		
68		

Ref. No.	Part No.	Part Name & Descriptions
		SCREW
301	47700180	
302	47303540	
*303	47000420	
*304	47560060	
305	47700641	
306	47000120	
307	47303540	
308		
309		
310	47113030	
311		
312		
313		
314	47000260	
315	47304550	
316	47702310	
317	47348010	
*320	20500030	
321	47180050	

⚠ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.

DENON



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

"SERIAL NO. _____"

PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

NIPPON COLUMBIA CO., LTD.

No. 14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107 JAPAN
TEL: 03-584-8111
TLX: JAPANOLA J22591
CABLE: NIPPONCOLUMBIA TOKYO

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luded in the list. See Page 14.

Ref. No.	Part No.	Part Name & Descriptions	Q'ty
SCREWS and NUTS (included Washers)			
301	4770018001	WASHER (P-87)	1
302	4730354035	TAPPING SCREW (2) 3x8	5
*303	4700042005	PAN SCREW WITH SW 3x8 (BK)	3
*304	4756006008	NUT M3	3
305	4770064107	FIXING SCREW	7
306	4700012022	PAN SCREW WITH W.SPW 3x12	5
307	4730354019	TAPPING SCREW (2) 3x8	31
308	—	WASHER φ9 (SP)	1
309	—	NUT M9 (SP)	1
310	4711303018	PAN SCREW 3x6	8
311	—	NUT M7 (SP)	3
312	—	NUT M12 (SP)	1
313	—	NUT M8 (SP)	1
314	4700026005	TAPPING SCREW WITH W3x8	2
315	4730455015	TAPPING SCREW (2) 4x10	4
316	4770231008	WASHER φ4 (S)	1
317	4734801005	TAPPING SCREW (TRUS) 4x8	4
*320	2050003107	3T LUG	1
321	4718005005	TAPPING SCREW WITH W. SPW 4x10	4

Ref. No.	Part No.	Part Name & Descriptions
PACKING & ACCESSORIES (not include EXPLODED VIEW)		
a.	5040064001	CABINET SHEET
b.	5030262101	CUSHION
c.	5010916024	CARTON CASE
*d.	5111213008	INST. MANUAL

The BLACK VERSION is equal to the GOLD VERSION except for the following items.

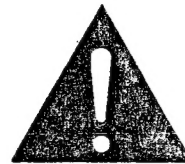
Ref. No.	Part No.	Part Name & Descriptions
40	1130515024	PUSH KNOB (A) FOR POWER
42	1441222213	FRONT PANEL ASS'Y
43	1460682229	WINDOW PANEL
45	1430361017	WINDOW
46	1449001012	ESC PLATE
47	1130513220	PUSH KNOB (B) ASS'Y
51	1130579112	PUSH KNOB (C) FOR INPUT
53	1120449016	KNOB (A) FOR MAIN
54	1120450018	KNOB (B) FOR BAL, SEL, BASS, TREBLE
55	1020148022	TOP COVER
SCREWS and NUTS		
317	4734454038	TAPPING SCREW (2) 4x8
PACKING & ACCESSORIES		
a	5040052013	CABINET COVER
c	5010915083	CARTON CASE

DENON



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

"SERIAL NO. _____"

PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

NIPPON COLUMBIA CO., LTD.

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